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PATENT APPLICATION

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Applicant(s): William J. Walker

Case No.: 500007-A-01-US

Serial No.: 09/837,929 Filed: 4/19/01

Group Art Unit: not assigned

Examiner: not assigned

Title: A MECHANISM FOR CONVERTING BETWEEN JAVA CLASSES AND XML

ASSISTANT COMMISSIONER FOR PATENTS
Washington, D.C. 20231

Att: Official Draftsman

S I R:

SUBMISSION OF FORMAL DRAWINGS

Applicants submit herewith six (6) sheets of formal drawings (FIGs 1-6) in connection with the above-captioned application.

Respectfully submitted,

6/22/01

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I hereby certify that this correspondence is being deposited on June 22, 2001 with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Carol Wilson
Signature

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Date of signature

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FIG. 1

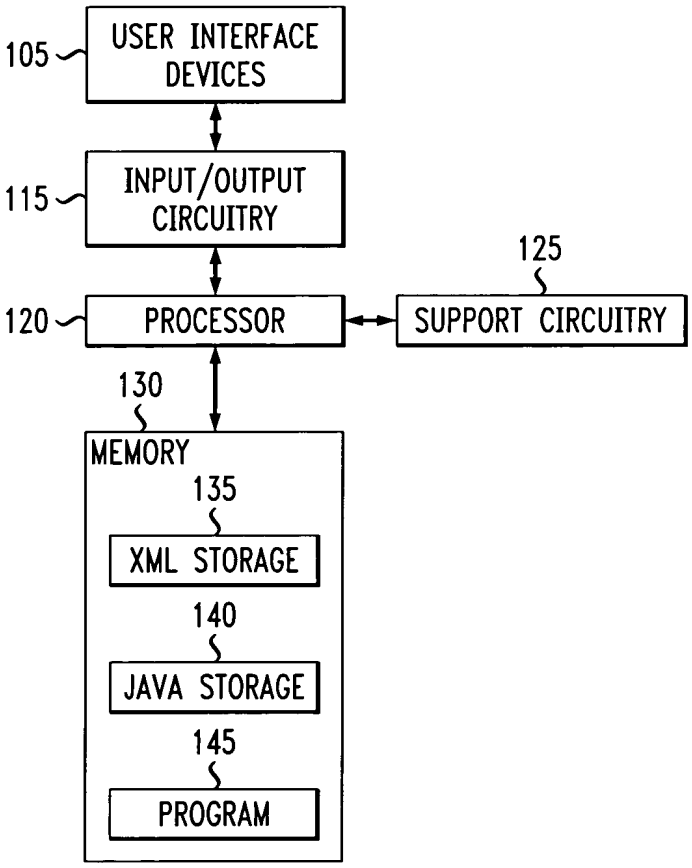

100
105
USER INTERFACE DEVICES
115
INPUT/OUTPUT CIRCUITRY
125
120
PROCESSOR
SUPPORT CIRCUITRY
130
MEMORY
135
XML STORAGE
140
JAVA STORAGE
145
PROGRAM

FIG. 2

200

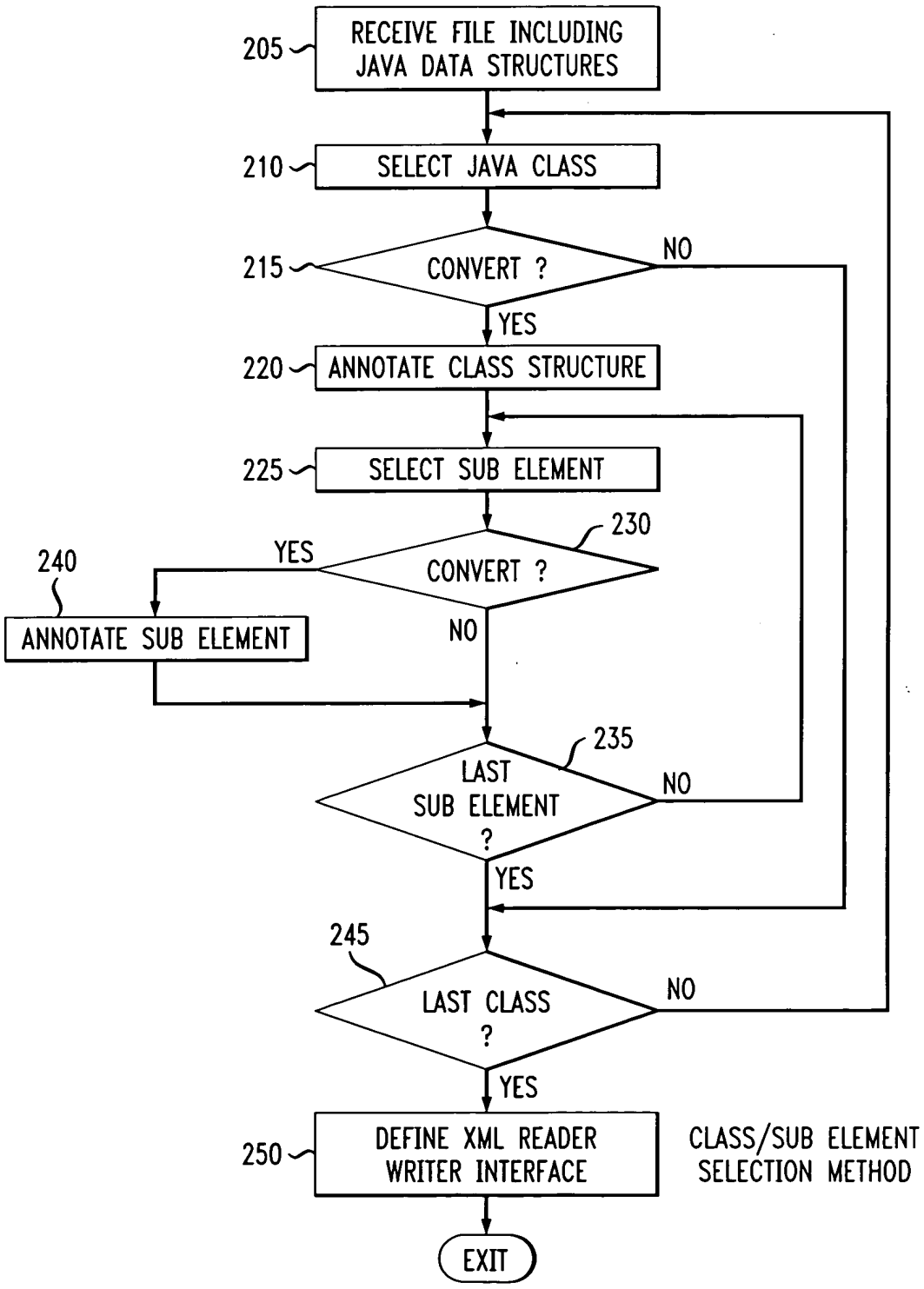

205
RECEIVE FILE INCLUDING JAVA DATA STRUCTURES
210
SELECT JAVA CLASS
215
CONVERT ?
NO
YES
220
ANNOTATE CLASS STRUCTURE
225
SELECT SUB ELEMENT
230
CONVERT ?
YES
240
ANNOTATE SUB ELEMENT
NO
235
LAST SUB ELEMENT ?
NO
YES
245
LAST CLASS ?
NO
YES
250
DEFINE XML READER WRITER INTERFACE
EXIT
CLASS/SUB ELEMENT SELECTION METHOD

FIG. 3

300

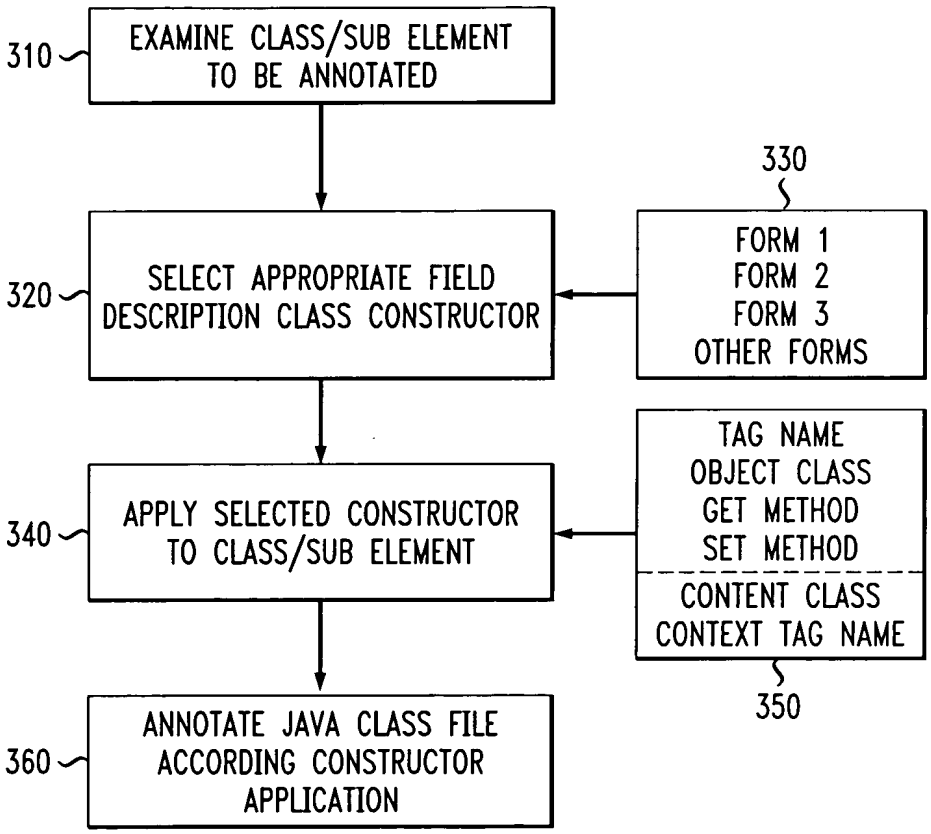

310
EXAMINE CLASS/SUB ELEMENT TO BE ANNOTATED
320
SELECT APPROPRIATE FIELD DESCRIPTION CLASS CONSTRUCTOR
330
FORM 1
FORM 2
FORM 3
OTHER FORMS
340
APPLY SELECTED CONSTRUCTOR TO CLASS/SUB ELEMENT
TAG NAME
OBJECT CLASS
GET METHOD
SET METHOD
CONTENT CLASS
CONTEXT TAG NAME
350
360
ANNOTATE JAVA CLASS FILE ACCORDING CONSTRUCTOR APPLICATION

FIG. 4

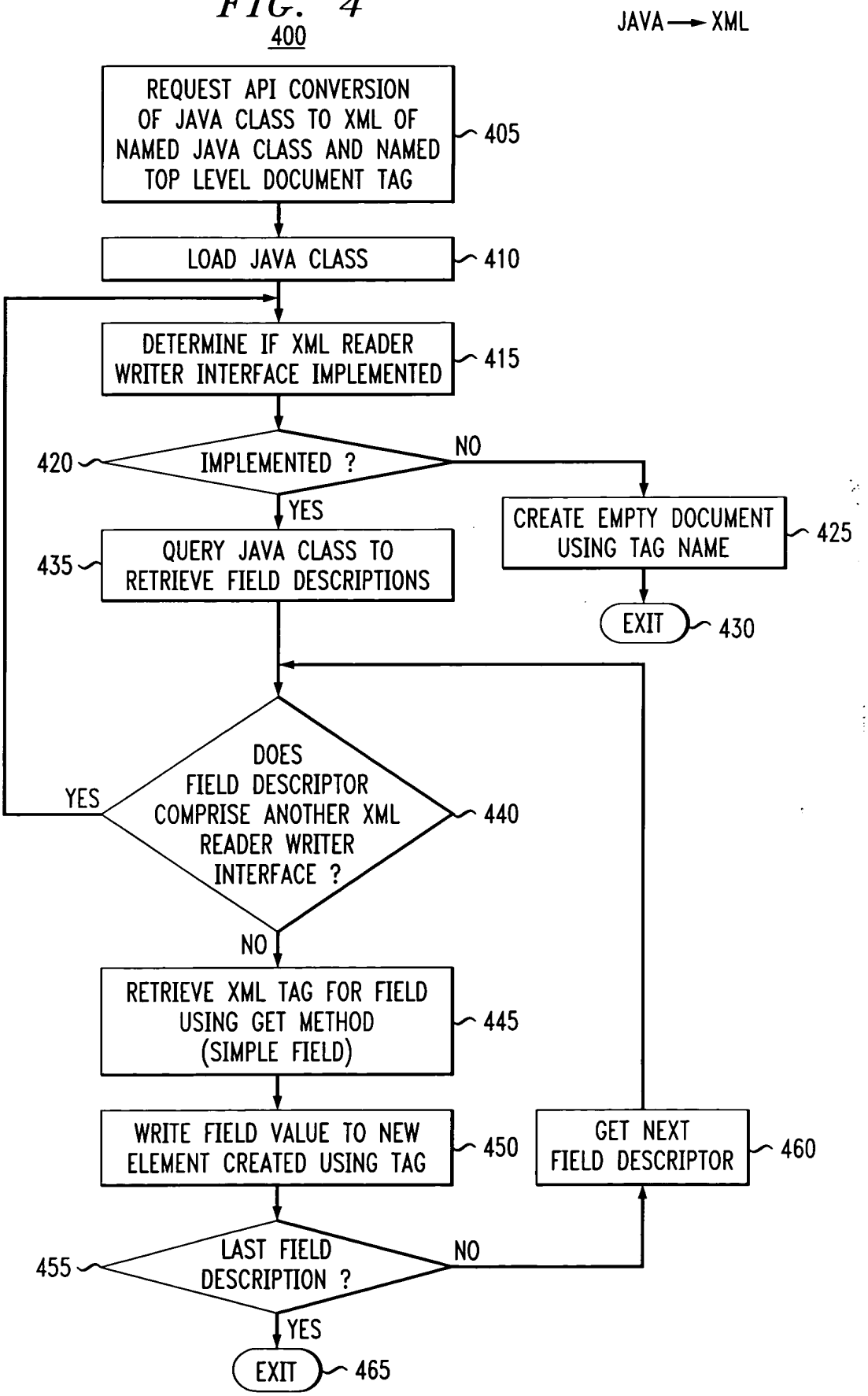

400
JAVA → XML
REQUEST API CONVERSION OF JAVA CLASS TO XML OF NAMED JAVA CLASS AND NAMED TOP LEVEL DOCUMENT TAG
405
LOAD JAVA CLASS
410
DETERMINE IF XML READER WRITER INTERFACE IMPLEMENTED
415
420
IMPLEMENTED ?
NO
YES
CREATE EMPTY DOCUMENT USING TAG NAME
425
EXIT
430
435
QUERY JAVA CLASS TO RETRIEVE FIELD DESCRIPTIONS
DOES FIELD DESCRIPTOR COMPRISE ANOTHER XML READER WRITER INTERFACE ?
440
YES
NO
RETRIEVE XML TAG FOR FIELD USING GET METHOD (SIMPLE FIELD)
445
WRITE FIELD VALUE TO NEW ELEMENT CREATED USING TAG
450
GET NEXT FIELD DESCRIPTOR
460
455
LAST FIELD DESCRIPTION ?
NO
YES
EXIT
465

FIG. 5

500

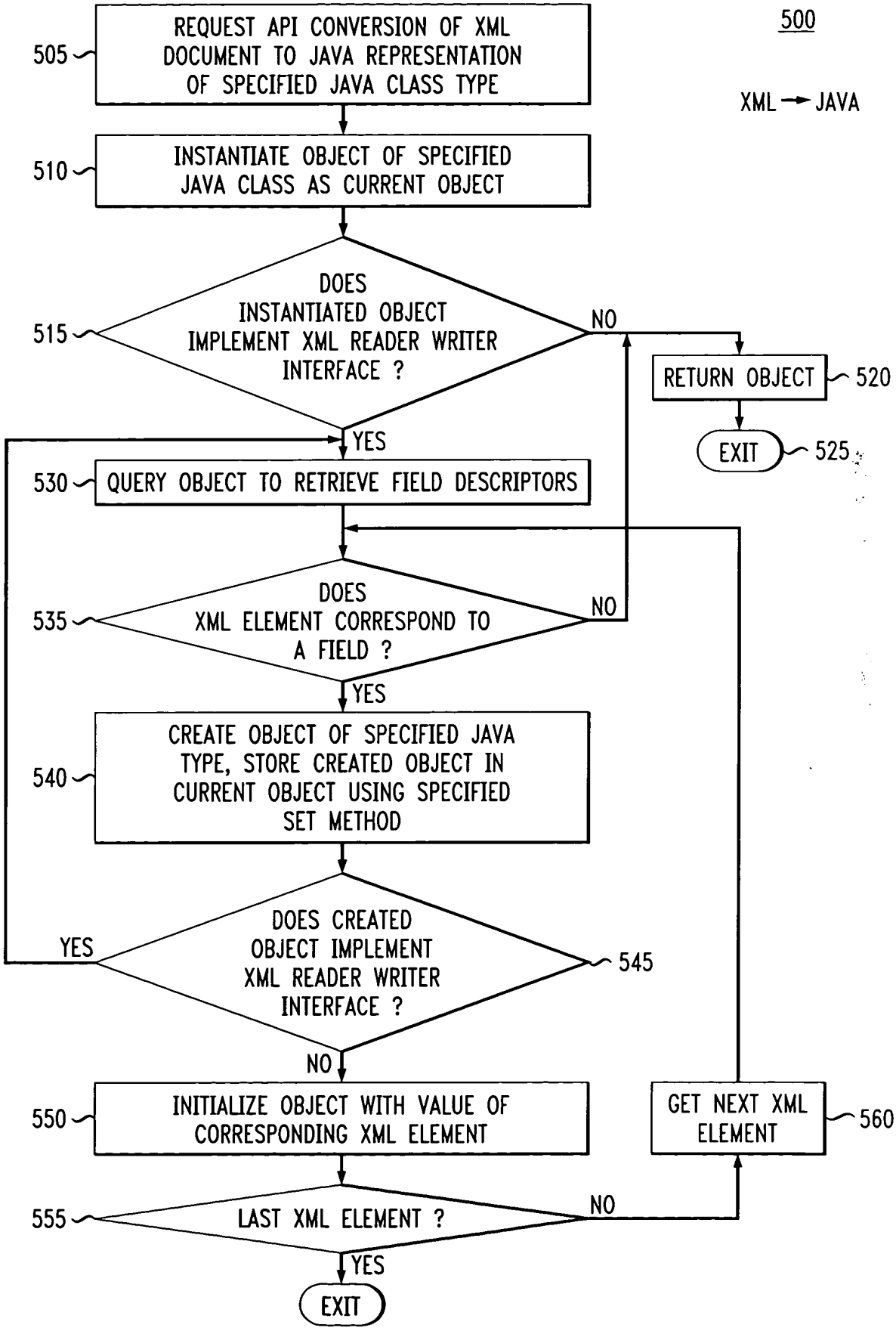
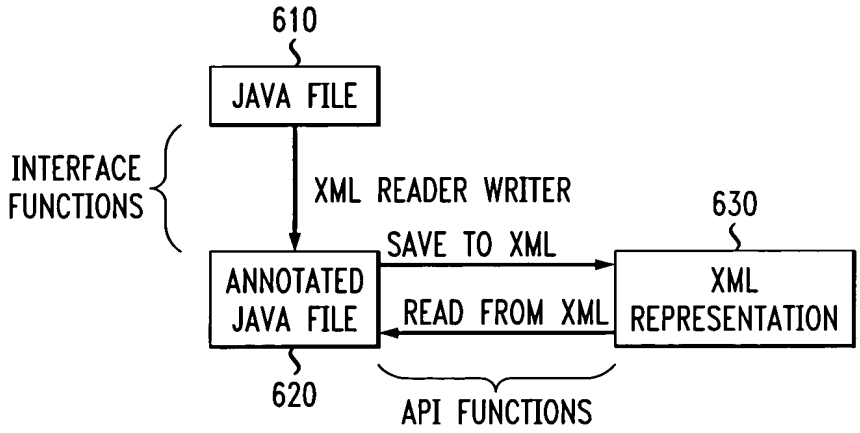

XML → JAVA
505
REQUEST API CONVERSION OF XML DOCUMENT TO JAVA REPRESENTATION OF SPECIFIED JAVA CLASS TYPE
510
INSTANTIATE OBJECT OF SPECIFIED JAVA CLASS AS CURRENT OBJECT
515
DOES INSTANTIATED OBJECT IMPLEMENT XML READER WRITER INTERFACE ?
NO
RETURN OBJECT
520
EXIT
525
YES
530
QUERY OBJECT TO RETRIEVE FIELD DESCRIPTORS
535
DOES XML ELEMENT CORRESPOND TO A FIELD ?
NO
YES
540
CREATE OBJECT OF SPECIFIED JAVA TYPE, STORE CREATED OBJECT IN CURRENT OBJECT USING SPECIFIED SET METHOD
DOES CREATED OBJECT IMPLEMENT XML READER WRITER INTERFACE ?
545
YES
NO
550
INITIALIZE OBJECT WITH VALUE OF CORRESPONDING XML ELEMENT
GET NEXT XML ELEMENT
560
555
LAST XML ELEMENT ?
NO
YES
EXIT

FIG. 6


610
JAVA FILE
INTERFACE FUNCTIONS
XML READER WRITER
630
SAVE TO XML
ANNOTATED JAVA FILE
READ FROM XML
XML REPRESENTATION
620
API FUNCTIONS